INFRASTRUCTURE COST ASSUMPTIONS FOR NORTH ESSEX LOCAL PLANS (SECTION 1) VIABILITY ASSESSMENT (APRIL 2017)

West of Braintree Garden Community

SCHEME WIDE ENABLING WORKS			
Physical Costs: Site Preparation & I	Cost	Comment	Source / Reference
- Based upon generic cost per residential unit	£170.1 m	Modelled at £20,000 per unit. Based on experience of large scale schemes elsewhere (circa £17,000 per unit) uplifted to provide contingency for a high quality public realm and sense of place. AECOM Concept Feasibility Study had assumed £16,250 per residential unit for scheme wide enabling activity, but excluded primary road layout costs.	EB/013/1/2 North Essex Local Plans Viability Assessment (Section 1) Main Report April 2017, Page 17. EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016, Pages 68 & 72
SCHEME WIDE COMMUNITY INFRASTRUCTURE			
On Site: Core Social Infrastructure	Cost	Comment	Y/N
Education	£76.5 m	Modelled at £9,000 per residential unit. Based upon separate calculations prepared with input by ECC in accordance with approach as set out in the ECC Guide to Developer Contributions. Includes assumptions of: Early Years: 0.09 pupils per house and 0.045 pupils per flat, 56 place model costing £1.18m each/£21,071 per place (April 2016 prices); Primary: 0.3 pupils per house and 0.15 pupils per flat, 2 FE model costing £6.82m each/£14,995 per place (April 2016 prices); Secondary: 0.2 pupils per house and 0.1 pupils per flat, 8 FE model costing £29.83m each/£21,071 per place (April 2016 prices); Assumes 80% houses & 20% flats. Equivalent total of circa £10,000/unit, inclusive of fees (10%) and contingency (10%). Fees excluded from final assumption (as covered elsewhere in viability appraisal) = £9,000/unit	EB/049 ECC Developers guide to Infrastructure Contributions 2016, Pupil yield factors are set out at sections 5.1.3 & 5.2.2 Capital cost estimates are set out in Appendices G & I (values updated to April 2016 using PUBSEC indexation)
Community & Health	£19.1 m	Modelled at £2,250 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 68 & 72) and Social infrastructure analysis set out at page 150
Open Spaces, Leisure & Sports	£23.4 m	Modelled at £2,750 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 68 & 72) and Social infrastructure analysis set out at page 150
Environmental / sustainability / was	£4.3 m	Modelled at £500 per unit, to provide a budget for as yet unspecified site specific environmental/sustainability enhancements.	No directly related evidence base source. Working assumption for modelling purposes.
SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE			
On Site	Cost	Comment	
Country Park	£5.0 m	AECOM Concept Feasibility study had assumed a £10m cost across options. Reduced to account for open space provision covered in part through the public realm dimension of site preparation & enabling costs. Modelled as a £5m contribution towards enhanced facilities/parking.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Pages 68 & 72.
A3 - A4 Shalford Rd / Pods Lane Quietway	£0.3 m	As per Jacobs M&A Study. A3 costed at <£250k & A4 costed at <£250k. Assumed overall cost for viability purposes £250k.	EB/014 North Essex Garden Communities Movement Access Study May 2017 Pages 101 & 102
PT5 Rapid Transit & Flagship Cycle Route	£5.0 m	As per Jacobs M&A Study. Costed at £4.5m to £5.5m, assuming route within garden community development envelope. Midpoint of £5m assumed for viability appraisals.	EB/014 North Essex Garden Communities Movement Access Study May 2017 Page 111

PT7 - Transit Hub	£6.0 m	As per Jacobs M&A Study. Costed at range of £5m to £7m. Midpoint of £6m assumed for viability appraisals.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 113
Travel plan measures (@ £1500/unit)	£13.0 m	As per AECOM Concept Feasibility. Sum of travel plan measures (smarter choices, car clubs, charging points, etc) & bus service subsidies & other public transport improvements. Equivalent to £1000-1500 per residential unit, top end of range selected to cover enhanced measures.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for travel plan measures & bus service subsidies (pages 69 & 73).
Employment support (@ £1,000/unit)	£8.5 m	Modelled at £1,000 per unit, to provide a budget for as yet unspecified site specific employment/economic development initiatives.	EB/009 Garden Communities NEGC Employment and Demographic Studies April 2017 refers to the need for a proactive approach to attract economic activity. No directly related evidence base on cost, so working assumption for modelling purposes.
Off Site	Cost	Comment	
Utilities - Electricity sub stations, gas supply & telecoms	£13.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 69 & 73).
Utilities - potable & waste water	£9.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 69 & 73).
Active Modes A1, A2, A3, A4 & A5 (cycleway improvements)	£6.7 m	As per Jacobs M&A Study. Measure A1 is costed at £300k-£600k, A2 is costed at £1.5m, A3 is costed at <£250k, A4 is costed at <£250k, A5 is costed at £3m to £6m. Range is assumed to be £5m- £8.4m. Midpoint of £6.7m assumed for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Pages 99, 100, 101, 102, 103.
PT4 - A131/A130 Bus Lane	£8.0 m	As per Jacobs M&A Study. PT4 is costed between £6.5m to £9.5m. Midpoint of £8m assumed for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 110
PT6 Rapid Transit & Flagship Cycle route NW Braintree	£6.0 m	As per Jacobs M&A Study. PT4 is costed between £4.5m to £7.5m. Midpoint of £6m assumed for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 112
R2 & R3 A120/B1256 Improvements (Interim & Final)	£15.0 m	As per Jacobs M&A Study. R2 (B1256 Blake End Rd Junction improvements) costed between £2m - £2.5m, R3a (A120/B1256 East junction improvements interim scheme) costed at £2m - £3m, R3b (A120/B1256 East Junction improvements final scheme) costed between £8m - £12m. Overall range £12m to £17.5m. Midpoint of £15m assumed for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Pages 115, 116, 117
R1 - A120/B1256 New Western Junction	£7.0 m	As per Jacobs M&A Study. R1 (A120/B1256 new western junction) is costed between £5m to £9m. Midpoint of £7m assumed for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 114
Contribution to Rapid Transit system (@ £1500 per unit)	£13.0 m	AECOM Concept Feasibility had assumed £1,500 per unit. Figure maintained given anticipated need to connect into a wider network.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for contribution to sub regional rapid transit (pages 69. 73).
Management & Long Term Govern	Cost	Comment	
Open space endowments	£30.0 m	Endowment sums calculated via separate analysis to consider capitalised maintenance costs of open spaces to be transferred to a local stewardship body. Figure will be influenced by nature of stewardship model/approach, breakdown of open space typologies and timing of transfer to stewardship body. Viability appraisals allow for a capital sum according to scale of development proposed.	No directly related evidence base source. Working assumption for modelling purposes.

Total all infrastructure costs	£439 m
Equivalent per residential unit	£51,605

INFRASTRUCTURE COST ASSUMPTIONS FOR NORTH ESSEX LOCAL PLANS (SECTION 1) VIABILITY ASSESSMENT (APRIL 2016)

Colchester Braintree Borders Garden Community

SCHEME WIDE ENABLING WORKS			
Physical Costs: Site Preparation & I	Cost	Comment	Source / Reference
- Based upon generic cost per residential unit	£473.2 m	Modelled at £20,000 per unit. Based on experience of large scale schemes elsewhere (circa £17,000 per unit) uplifted to provide contingency for a high quality public realm and sense of place. AECOM Concept Feasibility Study had assumed £16,250 per residential unit for scheme wide enabling activity, but excluded primary road layout costs.	EB/013/1/2 North Essex Local Plans Viability Assessment (Section 1) Main Report April 2017, Page 17. EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016, Pages 48, 52, 56, 60
SCHEME WIDE COMMUNITY INFRASTRUCTURE			
On Site: Core Social Infrastructure	Cost	Comment	Y/N
Education	£212.9 m	Modelled at £9,000 per residential unit. Based upon separate calculations prepared with input by ECC in accordance with approach as set out in the ECC Guide to Developer Contributions. Includes assumptions of: Early Years: 0.09 pupils per house and 0.045 pupils per flat, 56 place model costing £1.18m each/£21,071 per place (April 2016 prices); Primary: 0.3 pupils per house and 0.15 pupils per flat, 2 FE model costing £6.82m each/£14,995 per place (April 2016 prices); Secondary: 0.2 pupils per house and 0.1 pupils per flat, 8 FE model costing £29.83m each/£21,071 per place (April 2016 prices); Assumes 80% houses & 20% flats. Equivalent total of circa £10,000/unit, inclusive of fees (10%) and contingency (10%). Fees excluded from final assumption (as covered elsewhere in viability appraisal) = £9,000/unit	EB/049 ECC Developers guide to Infrastructure Contributions 2016, Pupil yield factors are set out at sections 5.1.3 & 5.2.2 Capital cost estimates are set out in Appendices G & I (values updated to April 2016 using PUBSEC indexation)
Community & Health	£53.2 m	Modelled at £2,250 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 48, 52, 56, 60) and Social infrastructure analysis set out at page 150
Open Spaces, Leisure & Sports	£65.1 m	Modelled at £2,750 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 48, 52, 56, 60) and Social infrastructure analysis set out at page 150
Environmental / sustainability / was	£11.8 m	Modelled at £500 per unit, to provide a budget for as yet unspecified site specific environmental/sustainability enhancements.	No directly related evidence base source. Working assumption for modelling purposes.
SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE			
On Site	Cost	Comment	
Country Park	£5.0 m	AECOM Concept Feasibility study had assumed a £10m cost across options. Reduced to account for open space provision covered in part through the public realm dimension of site preparation & enabling costs. Modelled as a £5m contribution towards enhanced facilities/parking.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Pages 48, 52, 56, 60).
A3 - Active Modes link (Church Lane - Marks Tey station)	£0.4 m	As per Jacobs M&A Study. Cost range identified £250k-£500k.	EB/014 North Essex Garden Communities Movement Access Study May 2017 Page 123
PT1a - Rapid Transit Loop (Bus only Roads)	£42.5 m	As per Jacobs M&A Study. Scheme costs based on out-turns of comparable scheme. Viability appraisals based upon midpoint of identified range (£35m-50m as had been set out in emerging draft M&A Study - later revised in final version to £45m-£50m).	EB/014 North Essex Garden Communities Movement Access Study May 2017 Page 131
PT2 - Park & Ride	£4.2 m	As per Jacobs M&A Study. Costed at range of £3.5m to £5m with top of range accounting for optimism bias @ 44%. Midpoint selected for analysis.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 134

PT3 - West Tey Railway Station	£50.0 m	Jacobs M&A Study assumed potential total cost of £145m-£158m comparable to Beaulieu Park station costs. Viability appraisal assumes capped contribution from the scheme of £50m. Other sources of funding may therefore be required subject to detailed design/feasibility (other sources of funding identified SELEP / Network Rail).	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 135
PT4 - West Tey Transit Hub	£6.0 m	As per Jacobs M&A Study. Costed at range of £5m to £7m based upon outturn of ECC park & ride facility costs. Viability appraisals assume mid point £6m	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 136
Travel plan measures (@ £1500/unit)	£36.0 m	As per AECOM Concept Feasibility. Sum of travel plan measures (smarter choices, car clubs, charging points, etc) & bus service subsidies & other public transport improvements. Equivalent to £1,000-1,500 per residential unit, top end of range selected to cover enhanced measures.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for travel plan measures & bus service subsidies (pages 49, 53, 57, 61).
Employment support (@ £750/unit)	£18.0 m	Modelled at £750 per unit, to provide a budget for as yet unspecified site specific employment/economic development initiatives.	EB/009 Garden Communities NEGC Employment and Demographic Studies April 2017 refers to the need for a proactive approach to attract economic activity. No directly related evidence base on cost, so working assumption for modelling purposes.
Off Site	Cost	Comment	
Utilities - Electricity sub stations, gas supply & telecoms	£30.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 49, 53, 57, 61).
Utilities - potable & waste water	£12.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 49, 53, 57, 61).
A2 & A4 - Active Modes Connections to Rural Hinterland, Cycle Links	£1.5 m	As per Jacobs M&A Study. Measure A2 is costed at <£1m and A4 at <£0.5m as broad budgetary allowances. Viability appraisals assume £1.5m in total.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Pages 122 & 124.
PR1 & PR 2- Marks Tey Station and junction package & Stane St reduction	£9.0 m	As per Jacobs M&A Study. PR1 costed at £16-18m based upon package of measures including bridge & junction works, PR2 costed at £1-2m. Viability appraisals assume part funding from the CBBGC, equivalent to 50% of scheme costs, £9m contribution. Other source of funding identified as Highways England.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Pages 126, 127, 128 & 129.
R2 - A12 Southern junction with Garden Community	£41.5 m	As per Jacobs M&A Study. Costed within range of £15m - £68m, based upon outturn costs of ECC schemes - A12 J28 (£15m) and M11 J7A (£68m which also includes link roads & new roundabouts/junctions). Viability appraisals assume midpoint of £41.5m. Cost will be heavily influenced by wider improvement works to A12.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 145
Contribution to A120 (@ £1,500 per unit)	£36.0 m	Assumed contribution from the CBBGC towards strategic improvement in the A120. Other sources of funding would be required to deliver the full A120 improvement scheme which serves a far broader role in strategic movement.	No directly related evidence base source. Working assumption for modelling purposes.
Contribution to Rapid Transit system (@ £1000 per unit)	£24.0 m	AECOM Concept Feasibility had assumed £1,500 per unit. Figures adjusted to acknowledge wider costs related to travel planning & on site related facilities including transit hub and rail station works.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for contribution to sub regional rapid transit (pages 49, 53, 57, 61).
Management & Long Term Govern	Cost	Comment	
Open space endowments	£50.0 m	Endowment sums calculated via separate analysis to consider capitalised maintenance costs of open spaces to be transferred to a local stewardship body. Figure will be influenced by nature of stewardship model/approach, breakdown of open space typologies and timing of transfer to stewardship body. Viability appraisals allow for a capital sum according to scale of development proposed.	No directly related evidence base source. Working assumption for modelling purposes.

Total all infrastructure costs	£1,182 m
Equivalent per residential unit	£49,972

INFRASTRUCTURE COST ASSUMPTIONS FOR NORTH ESSEX LOCAL PLANS (SECTION 1) VIABILITY ASSESSMENT (APRIL 2016)

Tendring Colchester Borders Garden Community

SCHEME WIDE ENABLING WORKS			
Physical Costs: Site Preparation & I	Cost	Comment	Source / Reference
- Based upon generic cost per residential unit	£159.4 m	Modelled at £20,000 per unit. Based on experience of large scale schemes elsewhere (circa £17,000 per unit) uplifted to provide contingency for a high quality public realm and sense of place. AECOM Concept Feasibility Study had assumed £16,250 per residential unit for scheme wide enabling activity, but excluded primary road layout costs.	EB/013/1/2 North Essex Local Plans Viability Assessment (Section 1) Main Report April 2017, Page 17 EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016, Pages 20, 24, 28
SCHEME WIDE COMMUNITY INFRASTRUCTURE			
On Site: Core Social Infrastructure	Cost	Comment	Y/N
Education	£71.7 m	Modelled at £9,000 per residential unit. Based upon separate calculations prepared with input by ECC in accordance with approach as set out in the ECC Guide to Developer Contributions. Includes assumptions of: Early Years: 0.09 pupils per house and 0.045 pupils per flat, 56 place model costing £1.18m each/£21,071 per place (April 2016 prices); Primary: 0.3 pupils per house and 0.15 pupils per flat, 2 FE model costing £6.82m each/£14,995 per place (April 2016 prices); Secondary: 0.2 pupils per house and 0.1 pupils per flat, 8 FE model costing £29.83m each/£21,071 per place (April 2016 prices); Assumes 80% houses & 20% flats. Equivalent total of circa £10,000/unit, inclusive of fees (10%) and contingency (10%). Fees excluded from final assumption (as covered elsewhere in viability appraisal) = £9,000/unit	EB/049 ECC Developers guide to Infrastructure Contributions 2016, Pupil yield factors are set out at sections 5.1.3 & 5.2.2 Capital cost estimates are set out in Appendices G & I (values updated to April 2016 using PUBSEC indexation)
Community & Health	£17.9 m	Modelled at £2,250 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 20, 24, 28) and Social infrastructure analysis set out at page 150
Open Spaces, Leisure & Sports	£21.9 m	Modelled at £2,750 per unit, as per AECOM Concept Feasibility and derived from AECOM's Social Infrastructure Model which evaluates social infrastructure needs based upon housing & population impacts.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Assumed rate per unit set out with each option (pages 20, 24, 28) and Social infrastructure analysis set out at page 150
Environmental / sustainability / was	£4.0 m	Modelled at £500 per unit, to provide a budget for as yet unspecified site specific environmental/sustainability enhancements.	No directly related evidence base source. Working assumption for modelling purposes.
SCHEME WIDE OTHER ITEMISED INFRASTRUCTURE			
On Site	Cost	Comment	
Country Park	£5.0 m	AECOM Concept Feasibility study had assumed a £10m cost across options. Reduced to account for open space provision covered in part through the public realm dimension of site preparation & enabling costs. Modelled as a £5m contribution towards enhanced facilities/parking.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Pages 20, 24, 28).
Provision of on site Rapid Transit & facilities	£30.0 m	As per Jacobs M&A Study. Scheme costs based on out-turns of comparable scheme, midpoint of identified range (£30m-50m), but includes range of itemised components not all of which may be required. Viability appraisal assumes £30m contribution.	EB/014 North Essex Garden Communities Movement Access Study May 2017 Page 158

PR1 A133 boulevard improvements	£6.0 m	Based upon anticipated need for a package of improvements to the A133 corridor, partly identified in the AECOM Concept Feasibility work. Jacobs M&A Study captures wider improvement works along A133 subject to funding via SELEP Growth Deal. Viability appraisals assume additional works of circa £6m to provide further tailored works in light of TCBGC.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 172 (wider works to A133) EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Pages 21, 25, 29
R1 A120 to A133 link road	£8.0 m	As per Jacobs M&A Study. Costed at range of £17m (2.4km 40mph dual carriageway corridor) to £25m (alternative alignment with higher 44% optimism bias). Viability appraisal assumes circa 50% funding contribution from TCBGC, as road will perform a wider strategic role not just related to the Garden Community.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 169 EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Pages 21, 25, 30
Travel plan measures (@ £1500/unit)	£12.0 m	As per AECOM Concept Feasibility. Sum of travel plan measures (smarter choices, car clubs, charging points, etc) & bus service subsidies & other public transport improvements. Equivalent to £1000-1500 per residential unit, top end of range selected to cover enhanced measures.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for travel plan measures & bus service subsidies (pages 21, 25, 30).
Off Site	Cost	Comment	
Utilities - Electricity sub stations, gas supply & telecoms	£17.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 21, 25, 29).
Utilities - potable & waste water	£10.0 m	Figure based upon AECOM Concept Feasibility off site utilities cost assessments by option. Figures adjusted to relate to proposed housing numbers.	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for off site utilities (pages 21, 25, 29).
Active Modes (A1, A5, A6, A7, A8)	£6.1 m	As per Jacobs M&A Study. Measure A1 is costed at £2.5m, A5 at £750k-£1.5m, A6 at £800k, A7 at £2m to £3.5m, A8 at <£100k. Item A5 included in site wide enabling/preparation costs (therefore excluded from this line item costing), leaving mid point of range at £6.1m.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Pages 150, 154, 155, 156, 157.
Contribution to Rapid Transit system (@ £750 per unit)	£6.0 m	AECOM Concept Feasibility had assumed £1,500 per unit. Figures adjusted to acknowledge wider costs related to travel planning & on site related facilities including on site provision of rapid transit route & associated facilities (£30m above).	EB/008(4/4) North Essex Garden Communities Concept Feasibility Study (Vol 3) Concept Options & Evaluation June 2016. Itemised costs for contribution to sub regional rapid transit (pages 21, 25, 29).
R2 - A133-B1027/B1028 Link	£1.0 m	As per Jacobs M&A Study. R2 costed at £5m - £6m, but commentary assumes only small contribution from TCBGC, assumed as £1m for viability purposes.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 170.
R23- A137 Bromley Road Improvements	£4.0 m	As per Jacobs M&A Study. Costed within range of £3m-£5m. Assumed mid point of range.	EB/014 North Essex Garden Communities Movement Access Study May 2017. Page 171
Management & Long Term Govern	Cost	Comment	
Open space endowments	£23.0 m	Endowment sums calculated via separate analysis to consider capitalised maintenance costs of open spaces to be transferred to a local stewardship body. Figure will be influenced by nature of stewardship model/approach, breakdown of open space typologies and timing of transfer to stewardship body. Viability appraisals allow for a capital sum according to scale of development proposed.	No directly related evidence base source. Working assumption for modelling purposes.

Total all infrastructure costs	£403 m
Equivalent per residential unit	£50,571